Exploring Aeronautics			
2005 Mathematics			
Learning Standards			
District of Columbia Mathematics			
Grade 5			
Activity/Lesson	**State**	**Standards**	
Wings(177-208)	DC	MA.5.M.1	Apply the concepts of perimeter and area to the solution of problems involving triangles and rectangles. Apply formulas where appropriate.
Wings(177-208)	DC	MA.5.M.2	Apply formulas for the areas of triangles, rectangles, and parallelograms; recognize that shapes with the same number of sides but different appearances can have the same area.
The Resource Center	DC	MA.5.NSO-N.3	Find and position integers, fractions, mixed numbers, and decimals (both positive and negative) on the number line.
The Resource Center	DC	MA.5.NSO-N.4	Compare and order integers (including negative integers) and positive fractions, mixed numbers, decimals, and percents.
Science of Flight	DC	MA.5.DASP.2	Construct, draw conclusions, and make predictions from various representations of data sets, including tables, line graphs, line plots, circle graphs, and bar graphs (where symbols or scales represent multiple units).
Integrating with Aeronautics	DC	MA.5.NSO-N.1	Estimate, round, and manipulate very large (e.g., billions) and very small (e.g., thousandths) numbers; demonstrate an understanding of place value to billions and thousandths.
Integrating with Aeronautics	DC	MA.5.NSO-N.2	Represent and compare very large (billions) and very small (thousandths) positive numbers in various forms, such as expanded notation without exponents, e.g., 9,724 = (9 x 1,000) + (7 x 100) + (2 x 10) + 4.
Integrating with Aeronautics	DC	MA.5.NSO-N.3	Find and position integers, fractions, mixed numbers, and decimals (both positive and negative) on the number line.
Integrating with Aeronautics	DC	MA.5.NSO-F.8	Explain different interpretations of fractions as a ratio of whole numbers, as parts of unit wholes, as parts of a collection, as division of whole numbers by whole numbers, and as locations on the number line.
Scientific Method(124-144)	DC	MA.5.DASP.2	Construct, draw conclusions, and make predictions from various representations of data sets, including tables, line graphs, line plots, circle graphs, and bar graphs (where symbols or scales represent multiple units).
Exploring Aeronautics			
2005 Mathematics			
Learning Standards			
District of Columbia Mathematics			
Grade 6			

Activity/Lesson	State	Standards	
Wings(177-208)	DC	MA.6.M.1	Differentiate between and use appropriate units of measures for two- and three-dimensional objects (i.e., when finding perimeter, area, and volume).
Wings(177-208)	DC	MA.6.M.2	Find areas of triangles and parallelograms. Recognize that shapes with the same number of sides but different appearances can have the same area.
Wings(177-208)	DC	MA.6.M.3	Develop strategies to find the area and perimeter of complex shapes (e.g., subdividing them into basic shapes such as quadrilaterals, triangles, circles).
The Resource Center	DC	MA.6.NSO-N.2	Compare and order positive and negative fractions, decimals, and mixed numbers and place them on a number line.
The Resource Center	DC	MA.6.NSO-N.6	Apply number theory concepts — including prime and composite numbers; prime factorization; greatest common factor; least common multiple; and divisibility rules for 2, 3, 4, 5, 6, 9, and 10 — to the solution of problems.
The Resource Center	DC	MA.6.NSO-C.9	Know integer subtraction is the inverse of integer addition; use the number line to model addition and subtraction of integers and add and subtract integers.
Science of Flight	DC	MA.6.M.4	Solve problems involving proportional relationships and units of measurement (e.g., same system unit conversions, scale models, maps, and speed).
Integrating with Aeronautics	DC	MA.6.NSO-N.1	Explain the properties of and compute with rational numbers, expressed in a variety of forms.
Integrating with Aeronautics	DC	MA.6.NSO-N.2	Compare and order positive and negative fractions, decimals, and mixed numbers and place them on a number line.
Integrating with Aeronautics	DC	MA.6.PRA.7	Distinguish between an algebraic expression and an equation.
Scientific Method(124-144)	DC	MA.6.DASP.1	Describe and compare data sets using the concepts of median, mean, mode, maximum and minimum, and range.
Exploring Aeronautics			
2005 Mathematics			
Learning Standards			
District of Columbia Mathematics			
Grade 7			
Activity/Lesson	**State**	**Standards**	
Tools of Aeronautics(257-326)	DC	MA.7.M.4	Construct and read drawings and models made to scale.
The Tools of Aeronautics	DC	MA.7.M.4	Construct and read drawings and models made to scale.

The Resource Center	DC	MA.7.NSO-N.1	Compare, order, estimate, and translate among integers, fractions, mixed numbers (i.e., rational numbers), decimals, and percents.
The Resource Center	DC	MA.7.NSO-N.2	Know that in decimal form, rational numbers either terminate or eventually repeat; locate rational numbers on the number line; convert between common repeating decimals and fractions.
Science of Flight	DC	MA.7.M.4	Construct and read drawings and models made to scale.
Integrating with Aeronautics	DC	MA.7.NSO-E.20	Estimate results of computations with rational numbers; determine estimates to a certain stated accuracy.
Integrating with Aeronautics	DC	MA.7.PRA.7	Identify, describe, and analyze linear relationships between two variables. Compare positive rate of change (e.g., y = 3x + 1) to negative rate of change (e.g., y = –3x + 1).
Integrating with Aeronautics	DC	MA.7.G.4	Know and understand the Pythagorean theorem and its converse. Apply the theorem to the solution of problems, including using it to find the length of the missing side of a right triangle, and perimeter, area, and volume problems.
Scientific Method(124-144)	DC	MA.7.DASP.1	Find, describe, and interpret appropriate measures of central tendency (mean, median, and mode) and spread (range) that represent a set of data.
Scientific Method(124-144)	DC	MA.7.DASP.2	Select, create, interpret, and use various tabular and graphical representations of data (e.g., circle graphs, Venn diagrams, stem-and-leaf plots, histograms, tables, and charts).
Scientific Method(124-144)	DC	MA.7.DASP.3	Describe the characteristics and limitations of a data sample. Identify different ways of selecting a sample (e.g., convenience sampling, responses to a survey, random sampling).
Exploring Aeronautics			
2005 Mathematics			
Learning Standards			
District of Columbia Mathematics			
Grade 8			
Activity/Lesson	**State**	**Standards**	
Wings(177-208)	DC	MA.8.M.4	Solve problems about similar figures and scale drawings. Understand that when the lengths of all dimensions of an object are multiplied by a scale factor, the surface area is multiplied by the square of the scale factor and the volume is multiplied by the cube of the scale factor.
The Resource Center	DC	MA.8.NSO-N.4	Read, write, and compare rational numbers in scientific notation (positive and negative powers of 10), and use them in calculations and problem situations.

Science of Flight	DC	MA.8.DASP.3	Recognize practices of collecting and displaying data that may bias the presentation or analysis.
Integrating with Aeronautics	DC	MA.8.NSO-N.1	Explain the properties of and compute with real numbers expressed in a variety of forms.
Integrating with Aeronautics	DC	MA.8.PRA.1	Use tables and graphs to represent and compare linear growth patterns. In particular, compare rates of change and x- and y-intercepts of different linear patterns.
Integrating with Aeronautics	DC	MA.8.G.6	Find the distance between two points on the coordinate plane using the distance formula; find the midpoint of the line segment; recognize that the distance formula is an application of the Pythagorean theorem.
Integrating with Aeronautics	DC	MA.8.DASP.5	Select, create, interpret, and use various tabular and graphical representations of data; differentiate between continuous and discrete data and ways to represent them.
Scientific Method(124-144)	DC	MA.8.DASP.2	Select, create, interpret, and use various tabular and graphical representations of data (e.g., scatterplots, box-and-whisker plots).
Scientific Method(124-144)	DC	MA.8.DASP.3	Recognize practices of collecting and displaying data that may bias the presentation or analysis.